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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,804	12/10/2004	Kenji Adachi	3019.010USU	8937

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EXAMINER	
DEES, NIKKI H	

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
06/18/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/517,804	ADACHI ET AL.	
	Examiner	Art Unit	
	Nikki H. Dees	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The Amendment filed March 21, 2008, has been entered. Claims 1-13 remain pending in the application. The previous objections to claims 1-6, 12 and 13 have been withdrawn in light of Applicant's amendments to these claims.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bank et al. (WO 98/58656) in view of [Crawford et al. (J. Agric. Food Chem. 1990. **38**. 2169-2175) or Medicinal Plants in the South Pacific (WHO Regional Publications. 1998. Western Pacific Series No. 19. p. 149) or Torres et al. (J. Agric. Food Chem. 1987. **35**. 921-925) or Chang et al. (J. Chromatogr. B. 2000. **760**. 227-235)].

4. Bank et al. teach a citral flavor deterioration inhibitor (or stabilizing agent) (abstract) in the form of a water-soluble plant extract (p. 5 lines 22-24). They also teach a storage stable food composition with a citrus flavor that includes this extract (claim 16).

5. Bank et al. add the plant extract inhibitor to their composition at a concentration ranging from about 10 ppm to 500 ppm (claim 15).

6. Bank et al. teach that their extract inhibits the formation of the citral degradation product *p*-methylacetophenone (claim 24).

7. Bank et al. state that the plant extract comprises a caffeic acid derivative (claim 3).

8. Bank et al. are silent as to the use of an extract from ashitaba, avocado, common plantain, oriental senna, hawthorn, semi-fermented tea leaves, or fermented tea leaves. They also do not speak specifically to the use of their composition in fragrances and cosmetics.

9. Crawford et al. teach the presence of caffeic acid in oriental senna (*Cassia obtusifolia*). Traces of chlorogenic acid (a caffeic acid derivative) were also detected (p. 2172).

10. WHO teaches the presence of caffeic acid and chlorogenic acid in common plantain (*Plantago major* L.) (p. 149).

11. Torres et al. teach the presence of caffeic acid in avocado (*Persea americana*) (p. 924).

12. Chang et al. speak to the presence of chlorogenic acid in the fruits of hawthorn (*Crataegus pinnatifida*) (p. 228).

13. Ashitaba, semi-fermented tea leaves and fermented tea leaves are also known in the art to contain high levels of polyphenols.

14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted an extract from a plant containing polyphenols, caffeic acid, or a caffeic acid derivative as taught by Crawford et al., WHO, Torres et al., or Chang et al. in the compositions or method taught by Bank et al. in order to inhibit the degradation of the citrus flavor. This would result in a product with greater citrus-flavor stability.

15. Regarding the use of the composition in fragrances and cosmetics, it would have been within the ability of one with ordinary skill in the art to modify an inhibitor of citral-deterioration smell in food-products for use in fragrances and cosmetics to inhibit the formation of an off-smell in these products as well.

Response to Arguments

16. Applicant's arguments filed March 21, 2008, have been fully considered but they are not persuasive.

17. Applicant argues (Remarks, p. 8) that the stabilizing effects of caffeic acid derivatives other than rosmarinic acid are not supported by Bank. Applicant further argues (Remarks, p. 9) that the broad disclosures of Bank do not render obvious the present invention.

18. As stated in the rejection *supra*, Bank claims caffeic acid derivatives in plant extracts for the reduction of citral degradation product formation. The prior art used in combination with Bank in the rejection teaches the presence of caffeic acid and

derivatives in the varieties of plant species claimed. A person of ordinary skill has good reason to pursue the known options within his or her technical grasp. As caffeic acid derivatives have been known to be used for the reduction of citral degradation products, and the plant species claimed are known to contain caffeic acid and derivatives, one of ordinary skill in the art would have had a reasonable expectation that the extracts of the plant species claimed would function to inhibit the degradation of citral flavors. If this leads to anticipated success, it is likely not the product of innovation, but of ordinary skill and common sense.

19. Applicant argues (Remarks, p. 10) that Bank does not teach the prevention of off flavors from *p*-cresol.

20. In response, applicant's claim 8 states that the citral degradation smell may be caused by p-cresol **or** (emphasis added) *p*-methylacetophenone. Therefore, the fact that Bank does not specifically teach *p*-cresol is not relevant to the instant claims. Bank does mention in Example 2 that none of the samples contained measurable amounts of *p*-cresol. Additionally, Bank teaches the invention as an inhibitor of citral degradation. The plant extract is added to inhibit the formation of *p*-methylacetophenone. Fig. 1 shows the pathway by which *p*-methylacetophenone is formed. The other product of the degradation is *p*-cresol. Though Bank does not teach the product as preventing the generation of *p*-cresol, it would be expected from the pathway in Fig. 1 that an extract which decreased the production of *p*-methylacetophenone would also decrease the production of *p*-cresol.

Conclusion

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikki H. Dees whose telephone number is (571) 270-3435. The examiner can normally be reached on Monday-Friday 7:30-5:00 EST (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nikki H. Dees
Examiner
Art Unit 1794

/Carol Chaney/
Supervisory Patent Examiner, Art Unit 1794